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## The Birds, the Bees and the STDs: A Content Analysis of Teenage Sexual Health Internet Message Boards

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The Birds, the Bees and the STDs:

A Content Analysis of Teenage Sexual Health Internet Message Boards

Jessica A. Kruse

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### Abstract

Recent research indicates that teenagers rely on electronic media for information about sexual health. In the present study the author examined the online information-seeking behaviors of male and female teenagers on two Internet message boards. Content analyses were conducted on user questions about pregnancy, birth control and sexually transmitted infections. Results indicated that (1) teens are very concerned about pregnancy but are less concerned about STIs, and (2) teens are not comfortable with negotiating condom use or STI testing with sexual partners. The outcomes from this study support the previous findings that teens do discuss sexual health on the Internet and shows that they specifically turn to the Internet with questions and anxieties regarding pregnancy and birth control options. These results indicate that sexual education should place more emphasis on training teenagers how to talk to their potential sexual partners about the importance of birth control options and STI testing before engaging in sexual activities.

*Keywords:* sex education, young adult, media, teens

## **The Birds, the Bees and the STDs: A Content Analysis of Teenage Sexual Health Internet Message Boards**

Teen pregnancy prevention is currently one of the Centers for Disease Control and Prevention's (CDC) top six priorities. It is considered a "winnable battle" in public health and of paramount importance to health and quality of life for our youth (CDC, 2012). While recent data shows that teenage birth rates in the United States are at a historic low of 31.3 births per 1,000 females (CDC, 2013), the U.S. still lags far behind other Westernized countries in teen births. Germany, for example, has a teen birth rate of 10, Italy seven, and Canada 14 (United Nations Statistic Division, 2008). At the same time, sexually active teenagers are at a higher risk of contracting sexually transmitted infections (STIs) than are adults (Martinez, Copen, & Abma, 2011). In the United States, teenage girls ages 15-19 have the highest rates of gonorrhea and chlamydia of any reported group, and syphilis rates among male and female teens have been on the rise every year for the past decade (CDC, 2010). Additionally, teens are reporting less instruction on birth control than in the past, with a drop from 81% of males and 87% of females in 1995 to 66% of males and 70% females in 2002 (Lindberg, Santelli, & Singh, 2006).

Of perhaps as much concern as sexual health itself is the matter of how and where teenagers are finding their sex education information and what they will do with that information (di Mauro & Joffe, 2009). Sex education—deciding who can teach what and at what age for children—is a sensitive topic for parents and policy makers alike, but it is the youth and teenagers who suffer the consequences of not learning about sex, safety and negotiating sexual interaction at a relevant age (Fields, 2008; Luker, 2006). At the same time, access to sex education is also changing. Although youth and teenagers in the 21<sup>st</sup> Century have more access to information on the Internet than ever before only some of this information is trustworthy.

While research on the efficacy of sex education programs, both on- and off-line, is abundant (Carter, 2012), how teenagers gather sex education information outside of the confines of a specific program, particularly how they gather information about sex on the Internet, is a topic that has not received much attention. This is perhaps due both to the difficulties involved in researching sexual topics among teenagers as well as to the rapidly changing and evolving nature of the Internet.

### **Research Statement**

This study examined the misconceptions and misunderstandings that teenagers have about sexual education topics such as contraceptives, pregnancy, and STIs. The author analyzed the content of two popular sexual health Internet message boards for teenagers to find answers the following questions:

1. What do teenagers know about sex and what don't they know?
2. What types of questions are teenagers asking on message boards about sex, and are they getting correct information from the responses?
3. What are the differences in the types of questions asked based on gender, age, race, location by country, or sexual orientation?

### **Literature Review**

#### **A Brief Overview of Sex Education in the United States**

The National Education Association first proposed teaching sex education in schools in 1892 when they passed a resolution that called for moral education in the schools (Association for Supervision and Curriculum Development, 1988). It wasn't until 1913 however that the resolution really took effect, when Chicago became the first major city to implement sex education for high schools, a move which was quickly countered by The Catholic Church (Freeman, 2006). More successful and less politically-charged sex education courses were

planned and implemented in places such as Grand Rapids, Michigan, where physiology teachers separated students by sex and taught about human sexuality as part of required high school biology courses (Freeman, 2006). In a roundabout way, it was World War I that helped bring sex education to youth and teens in the United States.

In 1914, as part of a social purity movement, The American Social Hygiene Association (ASHA) was founded. As American soldiers began contracting syphilis during sexual encounters overseas, the ASHA began working with the military to help teach soldiers about sexual hygiene. The first sex education film, *Damaged Goods*, was created by and for the military to warn soldiers of the consequences of syphilis (Eberwein, 1999). Following the War, a 1919 report from the U.S. Department of Labor's Children's Bureau suggested that sex education for these men would have been more beneficial in school rather than after joining the military (Freeman, 2006; Eberwein, 1999).

Throughout the 1920s and 1930s sex education began its integration into classrooms across the nation. The ASHA published a document in 1916 entitled “The Established Points in Social Hygiene Education” that helped legitimize and standardize sex education throughout the United States (Freeman, 2006). This document was updated and reprinted in 1924 and 1933, although the goal of encouraging sex within the confines of a monogamous, heterosexual, married relationship remained the ultimate goal. This was in conjunction with a 1939 statement from U.S. Surgeon General Thomas Parran, Jr. encouraging schools to focus sex education curricula on the “psychological and social” needs rather than on medical education (Gruenberg & Kaukonen, 1939).

Parran’s statement ushered in an era of sex education which focused on marriage and family relationships, with sex education commonly being administered by sociologists,

psychologists, and, in some places, home economics teachers and members of the PTA, in place of medical physicians (Freeman, 2006). Emphasis was placed on the importance of a family unit, which included male domination and female passivity (Freeman, 2006). The middle of the 20<sup>th</sup> Century also ushered in an era of wider media utilization for sex education, including pamphlets, books, radio programs and movies. During this time texts began to show diagrams of male and female anatomy and how the anatomy fit together for heterosexual intercourse. Same-sex sexual relationships were referred to as a “deviance” or mental illness (Freedman, 1987).

The sexual revolution of the 1960s helped advance sexuality education (as it was frequently called during the 1960s and 1970s) with more emphasis being placed on what we today call safe sex, including utilization of the recently invented birth control pill (Freeman, 2006). Women’s liberation, along with gay rights activities helped to modernize sex education. The Title X Family Planning Program (Public Health Service Act, 1970) furthered this modernization by providing funding for family planning services, educational programs and research.

Things changed in the 1980s, in part due to a Republican president in office and fear about HIV and AIDS. The progressive sex education of the 1970s became less popular as a political push came for abstinence programs and coincident HIV/AIDS fear increased support for these programs (Kempner, 2001). The Adolescent Family Life Act (AFLA) (Public Health Service Act, 1981) was passed with goal of reducing teen pregnancy by promoting abstinence. Abstinence-only programs such as *Teen Aid*<sup>1</sup> and *Sex Respect*<sup>2</sup> became popular. These programs were rooted in religious beliefs which portray sex before marriage as immoral and are still in

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<sup>1</sup> <http://www.teen-aid.org>

<sup>2</sup> [www.sexrespect.com](http://www.sexrespect.com)



existence today. The problem with some of these programs was that they gave inaccurate information about STIs, pregnancy and birth control (Kempner, 2001).

The passage of “welfare reform” (Personal Responsibility and Work Opportunity Reconciliation Act, 1996) included mandates that states adhere to teaching “abstinence-only sexual education” as described in the act in order to receive federal funding. Federal support for “abstinence-only sexual education” has increased in the time since this watershed act (Irvine, 2004). The focus became measuring the effectiveness of these curricula by tracking purported declines in teenage unwanted pregnancies and rates of sexually transmitted infections for teenagers, and lower abortion rates among teenagers. However, in recent years it has become clear that abstinence-only sex education are not effective in accomplishing these goals (Koehler, Manhart, & Lafferty, 2008). States slowly have begun rejecting federal funding for abstinence-only programs in the past few years. Since the Democratic administration took office in 2009 there has been a demand for evidence-based sex education and teen pregnancy prevention programs that include methods beyond abstinence.

In recent years both the U.S. Department of Health and Human Services and The American Academy of Pediatrics reported that abstinence-only sex education programs do not provide positive outcomes for the most common measures of sexual education and sexual health (Trenholm et al., 2007). The measures reviewed include knowledge of sexual risk-taking, rates of unprotected sex, consequences of STIs, age at first sexual intercourse, and perception of effectiveness of birth control pills and condoms. Additionally, they found that these results are distributed unequally when controlling for race, socioeconomic status, gender and sexuality, with disadvantaged populations being more negatively impacted.

**Importance of Sex Education for Today's Youth**

In 2011, 329,797 babies were born to U.S. teenaged women (aged 15–19 years), resulting in a live birth rate of 31.3 per 1,000 women for this age group. With a drop of 8% from 2010, this rate is a record low. While reasons for the declines are not clear, teens seem to be less sexually active than in previous years and more of those who are sexually active are using birth control (CDC, 2012). However, as previously mentioned, the United States is still experiencing a crisis in teen pregnancy. In 2008, teen pregnancy and childbirth accounted for nearly \$11 billion in costs to U.S. taxpayers in the form of increased health care and foster care, increased incarceration rates among children of teen parents and lost tax revenue due to lower educational attainment and income among teen mothers (National Campaign to Prevent Teen and Unplanned Pregnancy, 2011).

Additionally, pregnancy and birth are significant contributors to high school drop-out rates among girls. Only about 50% of teen mothers receive a high school diploma or general equivalency degree by age 22, compared with approximately 90% of women who had not given birth during adolescence (Perper, Peterson, & Manlove, 2010). This cycle of low education and poverty also has been shown to pass down to the next generation. Hoffman (2008) reported that the children of teenage mothers are more likely to have lower school achievement and higher high school drop-out rates than their peers. He also found that children of teenage mothers have higher rates of incarceration, higher rates of teen pregnancy and teen births, and also face an increased possibility of unemployment as a young adult. These effects remain for the teen mother and her child even after adjusting for those factors that increased the teenager's risk for pregnancy such as being raised in poverty, having parents with low levels of education, growing up in a single-parent family, and having poor performance in school.

### **The Role of Media in Sex Education**

Media has long been identified as one of the major components of “sexual socialization” as researched by Gagnon and Simon (1973), which is a process by which knowledge, attitudes, and values about sexuality are acquired. In their groundbreaking research, Gagnon and Simon (1973) include media as one of the key components of sexual socialization along with formal sex education, peers and families. In spite of the continuously-changing platforms and content of media (television, radio, magazines, Internet), it continues to remain a top source of sex education and information for teenagers in the United States. Even in the 1980s and 1990s, before the popularity of the Internet, teens reported learning a great deal of their sex information from media (Andre, Frevert, & Schuchmann, 1989; Kaiser Family Foundation & Children Now, 1997).

Additionally, a survey by Bachen and Illouz (1996) found that 94% of teens indicated looking to movies and television for understanding of romantic relationships, choosing those sources over friends or parents. Children and teens are inundated with sexual references, overtures and jokes in the media on a daily basis. Sex in the media is portrayed as fun and carefree, sexy, or romantic, and the focus is rarely on the negative possibilities in sexual encounters, which are brought up more consistently in sex education classes and sex talks with parents (Brown & Keller, 2000).

Once media information is processed, what becomes of it? Media literacy training aims to teach the public (teenagers in this particular example) how to critically analyze media in its various formats (Pinkleton, Austin, Cohen, Chen, & Fitzgerald, 2008). Pinkleton, Austin, Cohen, Chen, and Fitzgerald (2008) found that one of the main strengths of media literacy training is its ability to help teens better understand the portrayal of sex in the

media. Teenagers come away from such training with a less-idealized and more fact-based understanding of how media outlets use sex and sex imagery to promote their own commercial products and endeavors (Pinkleton, Austin, Chen, & Cohen, 2012).

### **The Internet as a Sex Information Tool**

Recent social research indicates that sexual norms for teenagers are shifting in comparison to the behaviors and expectations of past generations. For example, Bogle (2007) explores changing practices of courtship and sexual interaction for teens. She found that teens and young adults, particularly college students, are “hooking up” (p. 1) rather than dating. She also found that oral and anal sex are becoming more common among youth and teens than in the past. Additionally, the Internet is increasingly researched as a key factor influencing changes in youth culture. The Digital Youth Project<sup>3</sup> is a significant sociological undertaking that coordinates multiple research efforts under a larger umbrella of “the way young people learn, play, socialize, and participate in civic life” (Ito et al., 2008, Abstract, para. 1). Within this umbrella project, more focused work has been conducted including the influence of new media—cellular phones, texting, instant messaging and social networking websites—on adolescent intimacy behaviors including meeting, flirting, going out (Pascoe, 2010) and breaking up (Boyd, 2008). However, the available results do not include consideration of sexual education materials and comparable consideration of other potential influences.

While the effects of media play a large role in teenagers’ sexual information gathering, in the last decade, it has been the Internet with its ever-changing landscape that has provided unequivocal and immediate access to sex and sex information. Prior to a broadband and searchable Internet, the possibility of limiting access to sexual information was significantly more feasible than it is today. Currently, 93% of American teenagers are Internet users (Zhao, 2009). In a recent

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<sup>3</sup> <http://digitalyouth.ischool.berkeley.edu/>

study, Jones and Biddlecom (2011) found that 100% of the teens surveyed reported using the Internet daily, ranging from 30 minutes to a few hours. While race, class, and gender divides still exist in computer ownership and Internet access, access continues to increase annually and smart phones and alternative means of accessing the Internet other than a personal home computer continue to expand (Ito et al., 2008), particularly in industrialized nations such as the United States.

Recent studies show very mixed results concerning sources from which teenagers gather sexual education information. Ward (2003) reported that young adults most frequently turn to same-sex peers for sex information and advice. More recently, Jones and Biddlecom (2011) reported teens in both the Northeast and the Midwest cited friends and family (parents and siblings) as their primary sources for sex education. Additionally, they found that these teens seemed wary of turning to the Internet for advice on sex, citing a lack of credibility as the main reason. Contrary to this is Marshall (2011) who found the teens reported going first and foremost to the Internet for sex education and health education (44 out of 51 students).

Levine (2011) argues that for today's teenagers digital media is "not a tool, but an integrated part of young people's lives" (p. 20). Evidence suggests that teens are savvy Internet users, and are becoming better able to decipher which websites are credible and which are not (Marshall, 2011). Additionally, the popularity of social media websites such as Facebook, Twitter, and Pinterest would initially seem to be perfect venues for targeting teens about sexual health issues. Research show that this is not always the case, however, because teenagers are hesitant to intertwine social media and sexual health due to the electronic footprint created (Ralph, Berglas, Schwartz, & Brindis, 2011).

It is not the social friend-seeking aspects of the Internet that make it a popular choice for teenagers looking for sex information. Instead, it is the anonymity of the Internet that draws them when looking for sexual health information. They may find themselves seeking out answers to health questions on message boards and in chat rooms. Jones and Biddlecom (2011) found that when teens use the Internet for sex education advice, it is frequently because they have a specific question they feel too embarrassed to ask someone in person.

### **What Teens Do and Do Not Know about Sex**

In a recent study Jones, Biddlecom, Hebert, and Mellor (2011) reported that teens primarily used the Internet for sex information for school projects or for a specific problem or advice (i.e. a missed pill, broken condom). Additionally, teens in their study primarily identified websites with '.gov', '.edu', and '.org' as the most trustworthy domains for information, as well as websites associated with physicians, health care and similar agencies (i.e. WebMD). In a separate study, Jones and Biddlecom (2011) also found that teens also turned to the Internet to confirm or refute sexual health information originally heard from other sources. Additionally, teens seem to know that certain sources (such as Wikipedia) were not generally credible due to open access of the content. However, Marshall (2011) found that while teens tend to know which sources are credible, they also admit that those sites tend to be difficult for them to understand or that the information is presented in a way they find overwhelming.

It is important for researchers to know who is utilizing the Internet for sex information. Dolcini, Catania, Harper, Boyer, and Richards (2012) found that sexually inexperienced teens viewed media as more helpful than sexually experienced teens. However, when asked specifically about the Internet, it was sexually experienced teens who searched more for sexual information than their inexperienced peers.

Witte (1997) found that teens have many strong beliefs about condoms and other contraceptive devices, as well as an overall lack of knowledge regarding birth control options. Teens tend to believe that it is not romantic to use condoms, and that they can use specific sexual positions or the withdrawal method to avoid pregnancy. Females noted specifically that they rely on their boyfriend or partner to protect them and make contraceptive choices. Females also reported being hesitant to use hormonal birth control (HBC) in the form of a daily pill because they thought it would be difficult to remember to take pill every day; they also noted fears about side effects of HBC. Similarly, Flowers-Coulson, Kushner, and Bankowski (2000) found an overall lack of understanding among teens regarding how conception occurs and what behaviors are most likely to result in unintended pregnancy. The young adults they surveyed frequently questioned whether or not a female can get pregnant from oral sex or if she doesn't have intercourse. What is not clear from either of these studies is whether this is truly a lack of knowledge or a lack of trust in what they have heard. Tied to this trust is a common theme of anxiety from the participants, particularly about contracting an STI and about pregnancy. Teens in Flowers-Coulson and colleagues' (2000) study frequently asked questions such as "I just had sex. We used a condom, but now I'm afraid I'll be pregnant" (p. 181). Female teens also stated they did not feel they were well-equipped to negotiate condom use and birth control methods with their partner.

A recent study by Hamani et al. (2007) also found incorrect beliefs among the adolescents. For example, nearly 40% of the teens surveyed incorrectly believed that a female on HBC needs to take a break from the pill on occasion to "rest" the body from the hormones, and 25% incorrectly believed that taking HBC can cause future infertility. On a positive note however, they found that the majority of teens are aware that condoms are not 100% effective,

and that they can break or expire. They also found that while misconceptions (mistaken beliefs) about contraception and pregnancy can result in riskier behaviors among teens, a lack of knowledge (uncertainty) is not necessarily associated with risky behavior.

### **Gender Differences in Sex Education**

As noted previously in this paper, it is sometimes the anonymity of the Internet which makes it appealing to young adults. Even separation from the opposite gender can help aid students' comfort level when discussing sexual information. Charmaraman, Lee, and Erkut (2012) found that when young adult students were placed into single-sex classrooms to learn about sex, more sexual activity questions were raised than when students were in a mixed-gender classroom. Students were also observed as acting more "maturely" when being taught about sex in a single-sex class.

While there are studies that report what male and female young adults know about sex, most research focuses on only one sex at a time: rarely do studies compare knowledge and between the two sexes. For example, a recent Swedish study examined sexual knowledge among teens in Sweden, but only among male students (Makenzius, Gådin, Tydén, Romild, & Larsson, 2009). The study produced interesting results, including the following: Only half of students correctly knew that a person can have gonorrhea with no symptoms, and 30% did not know that chlamydia can cause infertility. Additionally, while 95% of the male students in this study believe that it is the responsibility of both partners to provide birth control, 35% still say that a girl who carries condoms most likely has too many sexual partners. What would have made this study, and others, more useful would have been a comparison between the knowledge and beliefs of male teens and female teens.



**Race and Class Differences in Sex Education**

As noted in the introduction, race plays a very large role in pregnancy and STI rates among young adults. A recent study by Coles, Makino and Stanwood (2011) reported that misconceptions about contraceptive side effects and fertility placed adolescents at higher risk for unintended pregnancy, especially among black teens. African American teens were also more likely to report more concerns about birth control side effects, and they were more likely to believe they were too young to get pregnant or that they could not get pregnant if it was their first sexual encounter. Additionally, black adolescent females reported unwanted births rates that were 7 times higher than any other race. Dolcini et al. (2012) similarly reported that African American youths are more likely to have earlier sexual “debut,” contract more STIs and report more pregnancies than their white peers. When looking at race and SES, Charmaraman et al. (2012) found that sixth grade students from higher risk, inner city schools asked more frequent questions concerning sexual activity than students from suburban, low risk schools.

**Methods**

When young adults choose to turn to the Internet for sexual education information, it is often because they are too afraid or embarrassed to ask someone they know personally (Jones & Biddlecom, 2011). The anonymity of the Internet provides a perfect environment for seeking answers to questions of a personal nature. However, the same anonymity also provides a breeding ground for inaccuracies, misinformation and outright falsehoods about sex.

While a number of researchers have analyzed the sources of sex information by teens (media, friends, family, school, physicians, etc.) (Leventhal & Brooks-Gunn, 2004), very little research has been conducted on what teens do and do not know about sex, particularly involving the Internet. Most of the research that has been done was conducted pre-Internet, or at least before the smart phone and high speed, Wi-Fi Internet access of the 21st Century. With this in

mind, I turned to the Internet to better understand teens' sex education questions. I wanted to answer the following research questions:

1. What do teenagers know about sex and what don't they know?
2. What types of questions are teenagers asking on message boards about sex, and are they getting correct information from the responses?
3. What are the differences in the types of questions asked based on gender, age, race, location by country, or sexual orientation?

By researching the types of questions frequently asked by young adults on the Internet, as well as the types of answers provided, health educators can better know what types of information and specific answers young adults are lacking in their sex education experience.

For this paper the author systematically analyzed two sex education message boards popular with teenagers: Scarleteen.com (Scarleteen.com) and HealthBoards.com (specifically the "Sexual Health—Teens" and "Pregnancy—Teen" subcategories on HealthBoards.com). These were chosen because Google search engine optimization data indicated that these two websites are the most popular of this type that strive to give correct, sex-positive information and advice. I considered questions from teen and preteen (typically ages 12-18) message boards focusing specifically on questions dealing with contraception information, STIs, and pregnancy.

Because the subject of this paper is relatively unexplored, a content analysis seemed to be the most appropriate approach for this study. Glaser's Constant Comparative Method (CCM) (Glaser, 1965) of qualitative analysis was used to analyze the questions and answers. Analysis began by providing a thorough description of each website and each particular message board, each of which was visited multiple times. Because of the constant changing nature of the Internet, I decided to analyze questions from July 1, 2011 through June 30, 2013. I analyzed the

questions themselves as well as any answers received. When possible, I took into account any information which could be ascertained regarding gender, age, location and sexual orientation.

Some overlap was found among some of the questions when categorizing them. For example, a question about a missed birth control pill and the potential for pregnancy could be put into either the Pregnancy category or the Birth Control category, and a question regarding a broken condom and the possibility of contracting an STI could be put into either the Birth Control category or the Sexually Transmitted Infections category. As questions were analyzed, care was taken to determine the main area of concern for the poster, and the questions were categorized based on the poster's top priority.

### **The Message Boards**

#### **Scarleteen.com.**

Scarleteen.com posits itself as a website providing "Sex ed for the real world: Inclusive, comprehensive and smart sexuality information and help for teens and 20s."<sup>4</sup> While the majority of users are American, Scarleteen.com receives visits from all over the world. Scarleteen.com is not just a message board; it is an interactive website experience that, visually, looks like a trendy teen magazine. It is updated daily with important sexuality and health news. At the time of writing, current news included an article on deciphering the health reform bill and how these changes might affect the board's visitors. There is, however, still a light-hearted tone to the website, which includes sections such as "Left Foot, Red, Right Hand, Green: The deal on sex positions"<sup>5</sup> and relationship and breakup advice.

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<sup>4</sup> [www.scarleteen.com](http://www.scarleteen.com)

<sup>5</sup> [http://www.scarleteen.com/article/boyfriend/left\\_foot\\_red\\_right\\_hand\\_green\\_the\\_deal\\_on\\_sex\\_positions](http://www.scarleteen.com/article/boyfriend/left_foot_red_right_hand_green_the_deal_on_sex_positions)

**HealthBoards.com.**

HealthBoards.com is a general health message board and is very different than Scarleteen.com. The website has different topical boards for hundreds of illnesses and health conditions. This can be beneficial, but also makes the website more difficult and time-consuming to navigate. It is not obvious at first glance that there are teen-specific message boards that are separate from other boards. For example, while there are message boards for sexual health and pregnancy, under the Teen Health<sup>6</sup> section of the website there are specific “Sexual Health—Teens”<sup>7</sup> and “Pregnancy—Teen”<sup>8</sup> boards. Adults are not permitted to ask questions, but they can answer questions. The teen boards request that if adults post responses, they be respectful and do not scold or chastise the original poster. Additionally, it is made clear that anxiety about HIV is not allowed on these boards, and any questions regarding this topic will be moved to a different, “HIV Anxiety” (not teen-specific) message board. Other information on the teen boards is outdated, including messages about emergency contraception (EC) with information and usage instructions from 2007. This is problematic because directions for use of EC have changed in the last six years. For example, EC can now be used for up to five days instead of the originally-touted three days (Fine et al., 2010). Additionally, in 2006 EC was available as an over-the-counter (OTC) for those aged 18 and older, but in 2009 it became OTC for those aged 17 and older. Further, in June, 2013, the United States Food and Drug Administration (FDA) approved EC for OTC distribution without the former minimum age requirement (17 years) (FDA, 2013).

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<sup>6</sup> <http://www.healthboards.com/boards/#teen>

<sup>7</sup> <http://www.healthboards.com/boards/sexual-health-teens/>

<sup>8</sup> <http://www.healthboards.com/boards/pregnancy-teen/>

## **Results**

During the two year period from July 1, 2011 through June 30, 2013, Scarleteen.com averaged 2.3 questions per day. Of the total 830 questions, 376 were considered as qualifying questions for the purposes of this study. There were 108 questions about pregnancy, 143 about birth control, and 125 about STIs. The other questions were about other dating and sex issues and were not used in this analysis.

Similarly, on HealthBoards.com during the same two year period, 786 questions were asked (359 on the Sexual Health—Teens board and 427 on the Pregnancy—Teen board) with a total of 510 qualifying questions. On the Sexual Health—Teens message board 83 questions qualified for this study: 38 about pregnancy, 10 about birth control, and 35 about STIs.

In total, 886 qualifying questions were posted on the two message boards during the two year period of the study. Fifty-three questions (6%) were discarded because they were repeated questions by the same author, leaving 833 questions for this study.

### **Demographic Information about Teens Utilizing Message Boards**

Gender and location of posters were recorded when possible. Of the analyzed questions, 431 questions were posted by females, 209 by males, and 193 were by undeterminable posters. The majority of the posters were from the United States (58%) although questions were posted from around the globe, including various European countries, India, Japan, and Brazil.

While not every poster gave demographic details, the study noted 14 questions that referenced being in a (non-U.S.) country where it was difficult to access birth control or to obtain an abortion. One girl wrote on HealthBoards.com that “I am engaging in sexual intercourse with my boyfriend. He does not want to use condoms, but says he will if I provide them. I know I

need to use them to not get pregnant, but I am in a country where it is difficult for girls to buy them.”<sup>9</sup>

Additionally, while this study was open to analyzing sex questions from posters of any sexual orientation, only 11 questions specifically mentioned engagement in same-sex activities. The majority of the questions specifically mentioned a heterosexual sexual relationship or were pertaining to pregnancy, thus it can be assumed they were asked by persons engaging in heterosexual sex activity. The study found that many teens only consider heterosexual vaginal-penile intercourse (PIV) to be “sex.” Other types of sexual activity are not always considered to be “sex”. A female poster on Scarleteen.com writes to ask about a situation, noting that “this only happens for oral, not sex.”<sup>10</sup> In this instance the poster is implying that other forms of sexual activity (oral sex, anal sex) are not sex and are instead something lesser on the sex activity spectrum.

### **What Do Teens Know about Sex?**

This study found that teens do not always trust what they have learned about sex. They frequently turn to friends or the Internet for validation and reassurance of their situation. Even when using two forms of birth control, teens are still not certain about pregnancy. For example, a teenage girl on Scarleteen.com writes, “I take the pill at the exact same time since I’ve started . . . [m]y boyfriend and I have been together for a year and we’ve always used condoms because even though I’m on BC, we wanted to be as safe as possible.” She continues by describing a specific incident where they had sexual intercourse without a condom, writing that “despite how consistent I am about taking my BC, I know there’s still a chance I could get pregnant.”<sup>11</sup> The poster realizes that she is not likely to become pregnant and yet still asks whether she should take

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<sup>9</sup> <http://www.healthboards.com/boards/sexual-health-teens/952340-i-am-really-scared.html>

<sup>10</sup> [http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get\\_topic/f/2/t/014247.html](http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get_topic/f/2/t/014247.html)

<sup>11</sup> [http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get\\_topic/f/2/t/014102.html](http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get_topic/f/2/t/014102.html)

a pregnancy test. This type of anxiety was noted frequently in the questions posted on the message boards, even when the original poster was certain he or she had engaged in safe sex.

Another example of this anxiety was noted in the numerous posts questioning a negative pregnancy test. More than 100 posts were written asking whether the person could be pregnant even though the pregnancy test (or multiple tests) came back negative. One female poster on the Pregnancy—Teen board on HealthBoards.com, after having unprotected sex with her boyfriend, and experiencing a delayed period writes “I did use a condom when I had intercourse. I took almost ten pregnancy tests, they were all negative.”<sup>12</sup> Additionally, the poster went to a clinic and took a pregnancy test there which was also negative. In spite of ten negative tests the poster still wonders whether or not she is pregnant.

Additionally, analysis of the message board questions showed that intention to engage in safe sex practice does not always result in safe sex practice. That is to say, although teens know what safe sex entails and may plan for it, they do not always implement safe sex practices. More than 60 questions posted on the two message boards consisted of posters concerned about a sex practice and knew it was a risky behavior. This was particularly common with teens using the pullout method as a form of pregnancy prevention. One girl wrote to Scarleteen.com to ask, “Me and my boyfriend had unprotected sex a few days ago and he pulled out. Then he . . . washed his penis off and we had unprotected sex again and he does this over and over. We’ve been having sex like this for the last two months. I know that unprotected sex isn’t good if you are trying to avoid pregnancy but I just wanted to know if there is a strong possibility of me getting pregnant.”<sup>13</sup> Here the poster clearly recognizes that her actions are increasing her risk of getting pregnant and continues to engage in this behavior.

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<sup>12</sup> <http://www.healthboards.com/boards/pregnancy-teen/950226-am-i-pregnant.html>

<sup>13</sup> [http://www.scarleteen.com/forum/ultimatebb.php?ubb/get\\_topic/f/2/t/014343.html](http://www.scarleteen.com/forum/ultimatebb.php?ubb/get_topic/f/2/t/014343.html)

### **What Questions do Teens Have about Sex?**

The most frequently questions asked on these message boards were questions regarding whether or not a poster may be pregnant, how to properly take hormonal birth control pills, how to tell if a condom was used properly, and whether or not someone should take EC.

Concern about pregnancy dominated the message boards, with 546 questions pertaining to this topic. As noted earlier, some of these questions were written by posters engaging in safe sex who were still concerned about possible pregnancy, or by persons knowingly engaging in long-term risky sexual behavior. However, the majority of pregnancy questions concerned one-time risky events such as a broken condom or a missed birth control pill. Teens posted more than 70 questions asking how to tell if a condom was broken or if it was being worn properly. Teen also wrote in to question rumors they heard about condoms, such as one male who posted on Scarleteen.com to ask, “Quick question about condom use . . . Is there any truth to the stories about microscopic tears [in condoms] that sperm can swim through?”<sup>14</sup> Condom use questions were asked more frequently by males than females.

On the other hand, with very rare exception, questions about HBC were primarily posted by female message board users. Pregnancy questions about HBC focused on whether or not one could be pregnant if she missed a pill (or multiple pills), or if she should use a second method of birth control, and if so, for how long. Females also frequently asked whether they should take an emergency contraceptive, or whether they still might be pregnant after having used EC.

In spite of anxiety and concern about pregnancy, the questions in this study did not always reflect concern about STIs. Questions regarding unprotected sex focused mainly on pregnancy concerns and not on whether or not the person should be tested for STIs, particularly questions about broken condoms. Analysis found that questions about STIs were most common

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<sup>14</sup> [http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get\\_topic/f/2/t/014327.html](http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get_topic/f/2/t/014327.html)



after a person had a symptom of an STI or was with a sexual partner who had a symptom. Most of the posts about STIs were asking for a diagnosis of a rash, a bump, itching or pain. In these instances, responders on both message boards encouraged the poster to see a medical doctor for a diagnosis, noting that no one (not even a doctor) could effectively and positively diagnose an STI without performing an in-person exam. Occasionally a poster would ask how often to get tested if one is sexually active, or how to talk about testing with a new partner. For example, a female wrote to Scarleteen.com wondering how to bring up testing with a boyfriend. “Before things progress any further, I really want for us to go for a full sexual health screening . . . I want to bring this up, but I’m unsure how and just wondered if anyone had any tips or advice.”<sup>15</sup> The analysis did not find questions regarding how to tell a partner if a person already has an STI, therefore this was not a subject that was analyzed. It is possible that teens with STIs utilize message boards specifically dedicated to these types of questions.

### **Discussion**

Questions posted on Scarleteen.com regarding pregnancy are answered by trained volunteers, or else by the Volunteer Director or Scarleteen.com’s Executive Director. As such, answers tend to be fairly similar, but are not simply generic responses. Each question is answered thoughtful, directly and specifically. Scarleteen.com helps users to evaluate his or her own individual and unique situation to assess whether or not the poster has a possible risk for pregnancy. When necessary, the trained volunteers will ask questions of the poster to get a more detailed or clearer description of the situation and will continue the dialogue within a message post until the original poster is satisfied with the response or until the poster stops responding. Additionally, it should be noted that Scarleteen.com recommends that anyone who is not ready to

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<sup>15</sup> [http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get\\_topic/f/2/t/011982/p/1.html](http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get_topic/f/2/t/011982/p/1.html)

become pregnant should always use two forms of birth control simultaneously (e.g., taking a hormonal birth control pill and also using condoms).

On HealthBoards.com questions are answered by other members of the board. While the Teen Boards are only for teens to post on, adults may respond to questions provided they are courteous and not condescending. Because of this, answers vary drastically from one question to another and are not always as in-depth as answers on Scarleteen.com. Answers on HealthBoards.com also tend to be more based in emotional comfort than in scientific evidence, as the community members try to sympathize with the poster's situation and make the poster feel better. As with Scarleteen.com, posters can carry on a back-and-forth dialogue within a posting, which is typically utilized to get more details about a question in order to properly answer. At the top of the Pregnancy—Teen message board is a notice that talks about EC options.<sup>16</sup> However, as noted earlier in this paper, the post has not been updated since 2007, and much has changed regarding EC in the last six years.

### **What Do Teens Know about Sex?**

Teens on these message boards are fairly confident about various types of birth control and basic sex education. However, they lack the experience to fully trust the knowledge they have, as well as the confidence to follow through with what they know. When they do not trust the facts, they turn to friends or the Internet for validation and reassurance of their situation. This is especially true regarding birth control failure. Interestingly, when it comes to birth control failure and pregnancy, the answers are readily available and easy to find. One simply has to look at the instructions included in a box of hormonal birth control pills to find out how many pills need to be taken before it is safe to have sex without a second birth control method, or how many pills can be missed before a backup method needs to be put into place. Similarly, there are

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<sup>16</sup> <http://www.healthboards.com/boards/pregnancy-teen/527887-plan-b-emergency-contraception.html>

instructions on how to correctly use a condom or other methods of birth control. However, teens on these message boards still seek advice from a person who is perceived to be in a position of knowledge and authority. More often than not in this study, teenagers appeared to know the correct answer to their questions, or know how to find the answer, but would ask the questions anyway. Additionally, what teens *know* and what they *do* are not always the same. Knowing how to engage in safe sex practices and actually engaging in safe sex practices are very different.

### **What Questions Do Teens Have about Sex?**

#### **Questions about pregnancy.**

The majority of questions pertaining to pregnancy on the message boards are basic questions about whether or not the poster (or poster's sexual partner) is, or has the potential to become, pregnant based on recent sexual activity. There is a separate message board for teens who are pregnant, therefore none of the questions analyzed were asked by a poster who was already knowingly pregnant. Nearly all of the questions pertaining to pregnancy could be further categorized into one of the following groupings: 1) No birth control and/or birth control failure, 2) Missed or late menstruation, or 3) Emergency contraception.

#### ***No birth control or birth control failure.***

Birth control failure includes all methods of birth control, regardless of scientifically proven failure rates. This includes questions about hormonal birth control options (pills, implants, injections, etc.), condoms and the pullout method. When it comes to birth control failure and pregnancy, the answers are readily available and easy to find. One simply has to look at the instructions included in a box of hormonal birth control pills to find out how many pills need to be taken before it is safe to have sex without a second birth control method, or how many pills can be missed before a backup method needs to be put into place. Similarly, there are

instructions on how to correctly use a condom. However, teens on these message boards still seek advice from a person who is perceived to be in a position of knowledge and authority. (It should be noted that the pullout method is never recommended as a form effective birth control and can result in pregnancy.) More often than not in this study, teenagers appeared to know the correct answer to their questions, or know how to find the answer, but would ask the questions anyway.

For example, one female poster who is on hormonal birth control, asked “I was on bc [birth control] for several months, but ran out of my prescription and it took me a while to get back into the doctor to get it refilled. I just restarted 5 days ago and last night my bf [boyfriend] and I had unprotected sex. I am worried that since I have only been on it for 5 days, the birth control will not protect me to the full extent.”<sup>17</sup> It would seem to be easier, perhaps, to go to the website for the specific birth control pill being used and find out how many days the pill needs to be taken before it is effective at preventing pregnancy. Instead, the poster came to this board to ask and is vague about the type of pill she is taking. In response, Scarleteen.com suggests that since she has only been taking the pill for five days (typically seven days or even a full month of pills is needed for full pregnancy prevention), she is at risk for pregnancy and should take an emergency contraceptive.

Surprisingly, however, there are many posters who do report using two methods of birth control at the same time. While this is comforting to read, some of the posters still report feeling anxiety about possible pregnancy if one of the two methods fails. An example of this is this post: “So I’ve been on birth control since November 2010 . . . I take the pill at the exact same time since I’ve started. My boyfriend and I have been together for a year and we’ve always used condoms because even though I’m on BC, we wanted to be as safe as possible. This past

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<sup>17</sup> [http://www.scarleteen.com/forum/ultimatebb.php?ubb/get\\_topic/f/2/t/014261.html](http://www.scarleteen.com/forum/ultimatebb.php?ubb/get_topic/f/2/t/014261.html)

weekend we didn't have any condoms, he entered me without one. Despite how consistent I am about taking my BC and how he wasn't inside me for very long, I know that there's still a chance I could get pregnant. Any advice? Am I being paranoid?"<sup>18</sup> A Scarleteen.com trained volunteer responds with statistics on the effectiveness of hormonal birth control pills, when taken as directed, and also posts a link to an article which talks about this effectiveness. She assures the poster that there is not a chance she is pregnant from this exchange, but does state the poster could take emergency contraception if it would ease her anxiety. Additionally she praises the poster's typical behavior of using both condoms and HBC, saying that it's an effective and safe way to prevent pregnancy. She concludes by recommending the poster be prepared with condoms in the future, or, if the couple are in a monogamous relationship and want to continue to have sex without condoms, they should both be tested for STIs before continuing in this manner.

***Missed or late menstruation.***

There is a great deal of concern among posters regarding late and missed periods as a sign they may be pregnant. One message board user asks whether or not she can possibly be pregnant because her period is three days late and she had unprotected sex with her boyfriend. She mentions that he did "pull out" before they finished, but that she is aware that this is not a guaranteed safe method.<sup>19</sup> This teen does have a legitimate concern, and there is a possibility she might be pregnant. Additionally, the teen is aware that the sex she had was not a safe way of preventing pregnancy, yet she still chose to engage in the activity.

With these types of questions, Scarleteen.com's staff generally recommends that the poster take a pregnancy test but also informs the poster that most women's menstruation cycles,

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<sup>18</sup> [http://www.scarleteen.com/forum/ultimatebb.php?ubb/get\\_topic/f/2/t/014102.html](http://www.scarleteen.com/forum/ultimatebb.php?ubb/get_topic/f/2/t/014102.html)

<sup>19</sup> [http://www.scarleteen.com/forum/ultimatebb.php?ubb/get\\_topic/f/2/t/013962/p/1.html](http://www.scarleteen.com/forum/ultimatebb.php?ubb/get_topic/f/2/t/013962/p/1.html)

particularly during the teen years, do not start on exactly the same day each month and they may simply be starting a few days later than normal. Additionally, in many instances, Scarleteen.com encourages the posters to start practicing safe sex to avoid this worry in the future.

HealthBoards.com, on the other hand answers basic questions about possible pregnancy suggesting the poster take a pregnancy test, but the responses generally do not provide any additional resources, nor do they encourage or recommend future safe sex practices.

The message boards also contained questions about getting pregnant if having unprotected sex immediately before or during menstruation. For example, a poster asks, “If you have unprotected sex the day before you are supposed to start your period, and the next day you still have your period, is there still a way that you have conceived? Can you have just gotten pregnant, but still have your period?”<sup>20</sup> Interestingly, late or missed periods are also a concern among posters who have practiced safe sex methods, suggesting that some teens don’t always trust the methods of protection they are using, even if used properly.

### ***Emergency contraception.***

Most of the questions regarding emergency contraception were categorized under “Pregnancy” simply because the posters were typically seeking advice on whether or not they should take emergency contraception after a specific sexual encounter that occurred in the previous couple of days. A few exceptions (e.g. questions regarding how EC works, efficacy) were placed in the “Birth Control” category instead.

Typically, EC questions asked advice on whether a particular situation warranted the use of EC, including a missed hormonal birth control pill, a condom that broke or fell off, or after unprotected sex. Another common question on both message boards was whether or not a poster would have been ovulating at the time of the encounter, in order to assess whether to obtain EC.

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<sup>20</sup> [http://www.scarleteen.com/forum/ultimatebb.php?ubb/get\\_topic/f/2/t/014055.html](http://www.scarleteen.com/forum/ultimatebb.php?ubb/get_topic/f/2/t/014055.html)

While most of the information provided in answers to questions on both message boards was accurate, the incorrect information that was found was mainly inaccuracies about EC. One common misconception on these boards was that EC is dangerous if taken too many times. Additionally, multiple posters on both message boards mentioned “knowing” that taking EC can increase the risk of future miscarriage or ectopic pregnancy (neither of which are true) and on two different posts community responders claimed that EC was a form of abortion.<sup>21,22</sup> In truth, however, EC is just as safe as any other form of hormonal birth control. It does not increase your risk of miscarriage or ectopic pregnancy, nor is it a form of abortion, as it acts to prevent pregnancy from occurring (Noe et al., 2011).

### **Questions about birth control.**

In the present analysis, questions posted on both Scarleteen.com and Teen Sex HealthBoards.com centered around the different types and proper usage of birth control. This research found that the two most common forms of birth control considered and used by the teens on these message boards were hormonal birth control pills and condoms. There were a few questions asked about other birth control options, such as IUDs (intrauterine devices) and natural family planning, but these questions were rare.

### ***Hormonal birth control.***

Most of the teens who posted questions about hormonal birth control were female. While a few of the questions concerned long-term hormone birth control alternatives to pills (e.g. hormonal shots such as Depo-Provera and monthly hormonal inserts such as NuvaRing), most of the questions were asked about daily hormonal birth control pills. The questions centered around

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<sup>21</sup> [http://www.scarleteen.com/forum/ultimatebb.php?ubb/get\\_topic/f/2/t/003948/p/1.html](http://www.scarleteen.com/forum/ultimatebb.php?ubb/get_topic/f/2/t/003948/p/1.html)

<sup>22</sup> [http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get\\_topic/f/10/t/000069.html](http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get_topic/f/10/t/000069.html)

the various types of hormonal birth control pills, side effects of taking HBC pills, and how to access HBC pills without parental knowledge.

Females came to the message boards looking for advice on which form of HBC would be the best fit for them or asking others' opinions about a specific pill. A higher percentage of questions about HBC pills were present on Scarleteen.com than on HealthBoards.com. On Scarleteen.com, a post called "Review Your Birth Control"<sup>23</sup> is an attempt to encourage members of the board to offer personal opinions and share experiences on various types of hormonal birth control. The post, however, has garnered little attention; instead, members tend to post individually when looking for advice on a particular pill.

Females who visit both websites also utilize the message boards to inquire about side effects of different pills. Typical side effects that the posters ask about include spotting between cycles, soreness and mood changes. On Scarleteen.com, typical responses to these questions include assurance that these are normal side effects of HCB pills, especially when beginning on a new medication. The trained volunteers who respond to questions generally encourage a "wait and see" approach, suggesting the posters try a new pill for a few months to see if the side effects disappear or decrease before considering an alternative birth control option. Scarleteen.com's team also posts links to scientifically-based articles about HBC pills, common side effects, and frequently asked questions that include a great deal of helpful information. Hormonal birth control posts on HealthBoards.com tended to focus specifically on pregnancy-related questions and not on specific types of HBC pills.

A common recurring theme in HBC pills questions was about missed pills. Teens on the message board were concerned whether or not their pills would be effective if they missed one or more pills during a cycle. One girl posting on Healthboards.com wrote in to ask what to do if

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<sup>23</sup> [http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get\\_topic/f/2/t/009549.html](http://www.scarleteen.com/cgi-bin/forum/ultimatebb.cgi?ubb/get_topic/f/2/t/009549.html)



she missed three pills in a row but had sex without a condom. A member responded to tell her that she should get EC because she could not guarantee that she would have been protected from pregnancy by the pill in this case.<sup>24</sup> Questions such as this on Scarleteen.com were answered in a similar fashion; however, typically the responses would also include a reminder to use another form of contraception until starting a new pack of pills, as well as a link to information on HBC pills.

Another concern common among posters was access to hormonal birth control. Numerous questions were asked regarding how to go about obtaining HBC pills without parental knowledge. For example, one teenage girl on Scarleteen.com wrote to ask “I plan on being very safe, with birth control and condoms. But I really have no way of getting them.”<sup>25</sup> In response Scarleteen.com suggests the teen find a local free health clinic, where she can be seen without using health insurance, and can obtain HBC pills without her parents’ knowledge.

### *Condoms.*

Teens had many questions about condoms including access to condoms, proper use of condoms, and failure of condoms. Males were more present on the message boards when writing in to ask about condom use than in either of the other main categories, but a female population was also present and concerned with making sure condoms were used during sexual encounters. The female condom was only mentioned by two posters, both of whom were asking about how to use it and whether it would be a good option for them. Additionally, it was noted that based on the questions being asked on these message boards, condom use appears to be mainly limited to heterosexual PIV. Very rarely did teenagers ask about using condoms during oral or anal sex.

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<sup>24</sup> <http://www.healthboards.com/boards/pregnancy-teen/759486-missed-pill-pregnant.html>

<sup>25</sup> [http://www.scarleteen.com/forum/ultimatebb.php?ubb/get\\_topic/f/2/t/014316.html](http://www.scarleteen.com/forum/ultimatebb.php?ubb/get_topic/f/2/t/014316.html)

As with HBC pills, some teens expressed concern over how to access condoms. A few noted they would use them (both consistently and more frequently than they currently used them) if they were able to get them for free or knew how to hide them from their parents. Multiple posts on both message boards recommended going to a free health clinic or the local public health department to get condoms for free, or suggested asking a nurse if they had access to one at their school.

There is some confusion among teens on these message boards about the effectiveness of condoms. This is in part because condoms are 98% effective against pregnancy and STIs when used consistently and correctly (Trussell, 2004). However, because not everyone uses them consistently or correctly, the actual effectiveness percentage is about 85% (Trussell, 2004). Teens on these boards also seem to be curious about how or why condoms would fail, asking general questions about how to tell if a condom is broken, or why a condom might come off during sexual activity.

### **Questions about sexually transmitted infections.**

Questions regarding sexually transmitted infections were also analyzed in this study. Females were more likely than males to write in with STI concerns. STI questions were mainly about one of the following general concerns: 1) Diagnosis of a specific noticeable condition, 2) Concerns about STI risk with unprotected sex, and 3) Questions regarding whether a person should be tested for STIs when no visible symptoms are present.

Questions about diagnosis of specific conditions were generally answered very quickly with instructions for the person to go see a physician for a diagnosis. Analysis did not identify any attempts to fully diagnose a person based on symptoms described. On both message boards, people were reminded that a diagnosis could only be made by visiting a medical professional in

person. Additionally, on Scarleteen.com, these questions were often followed up with a reminder to practice safe sex and a link to an article on STIs.

The second main area of concern was STI risk following unprotected sex. Questions were asked about unprotected sex with monogamous partners as well as within multiple partner or non-monogamous relationships. In some instances no condom was used and in other cases questions were posed after a condom broke or fell off during intercourse. One example of a question from female posting about unprotected sex with a casual partner; she is worried she might have contracted herpes. She writes, “We did use protection initially, but the condom split. I was aware he had a small cut but that was a few weeks ago and it had healed. I went and got the morning after pill. Should I also get tested for STIs?”<sup>26</sup> She continues by writing about the stress and shame she will feel if she has herpes. The response she gets recommends that she be tested, especially before engaging in any more sexual activity. Additionally, a helpful link is posted to an article about how to deal with shame and embarrassment after a herpes diagnosis.

The message boards also contained questions regarding general health guidelines and logistics of getting tested for STIs. Teens frequently asked for advice on how to ask a potential sex partner whether or not they have been tested, or if they will get tested. What is interesting is that this puts teens in a difficult situation in either case—they are ashamed or embarrassed to ask a partner about testing for STIs and they also report feeling ashamed when they find out they have contracted an STI. As with access to birth control, teens also ask for advice on how to get tested for STIs without their parents’ knowledge or without their health insurance getting involved.

There were also a few questions concerning commonly repeated myths about STIs, in particular the myth that one can catch STIs from public toilets. One example of this is from a

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<sup>26</sup> [http://www.scarleteen.com/forum/ultimatebb.php?ubb/get\\_topic/f/2/t/014288.html](http://www.scarleteen.com/forum/ultimatebb.php?ubb/get_topic/f/2/t/014288.html)

poster who thought she may have herpes wrote to ask whether she could have gotten herpes from a public toilet seat.<sup>27</sup> Similarly, a poster wrote in to HealthBoards.com to enquire whether a bump she found in her pubic area could have been caught from a public restroom.<sup>28</sup> In both cases, the question was posed in such a way as to insinuate that the poster was hoping that they did not contract an STI from their current partner(s) but instead contracted it from an inanimate object.

### **The Message Boards**

#### **Scarleteen.com.**

Based in Seattle, Washington, Scarleteen.com is a private organization with a 2012 operating budget of \$45,000.<sup>29</sup> Scarleteen.com encourages a thoughtful, personal approach to sex and sex education in a safe, nonjudgmental environment. The message board on Scarleteen.com is run by a trained group of employees and volunteers. This creates a board where questions are answered respectfully and consistently with current, evidence-based research, and every question garners a response. The responders take the time to review a poster's history on the board (including other questions, if any, that have been asked by the user), and will include any relevant past history in their current responses. Responders encourage a back-and-forth dialogue with the original poster to ensure the poster's question is thoroughly answered. Additionally, responders try to educate while answering questions by posting links to relevant sexual education materials for the poster's edification.

#### **HealthBoards.com.**

Based in El Segundo, California, Healthboards.com is a more anonymous platform. The message boards on HealthBoards.com have facilitators who maintain order and ensure rules are

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<sup>27</sup> [http://www.scarleteen.com/forum/ultimatebb.php?ubb/get\\_topic/f/2/t/014272.html](http://www.scarleteen.com/forum/ultimatebb.php?ubb/get_topic/f/2/t/014272.html)

<sup>28</sup> <http://index.healthboards.com/std/bump-on-labia/1/>

<sup>29</sup> [http://www.scarleteen.com/about\\_scarleteen](http://www.scarleteen.com/about_scarleteen)

followed, but questions are typically answered by other members, and about 25% of questions (on these two particular boards) were unanswered due to low levels of activity. When questions were answered, sometimes the responses came days, weeks or even months after the original post, even if the question was time-sensitive. Answers can be given by anyone who is a member of HealthBoards.com, therefore answers vary drastically from question to question. Answers tended to offer emotional support rather than scientific, evidence-based responses. Much of the dialogue was spent assuring the original poster that he/she would be “okay” and not necessarily instructing the poster on how he/she could go about solving the problem.

### **Comparison of the boards.**

Scarleteen.com consistently provides more thorough and accurate responses to questions than HealthBoards.com. Scarleteen.com also ensures every question was answered. On the other hand, HealthBoards.com relies on other members to answer questions, which means questions sometimes remain unanswered or are not answered in a timely manner. Additionally, some HealthBoards.com recommendations regarding birth control are outdated, such as 1) emergency contraception options still recommend outdated instructions for use, and 2) emergency contraception options still stated as only beneficial for 72 hours after sexual intercourse. No information was noted regarding how to obtain EC or the 2013 removal of age limitations for EC.

Scarleteen.com is a constructive example of The Transtheoretical Model (TTM) (Prochaska & DiClemente, 2005) of health behavior. TTM posits that because individuals are in different stages of readiness regarding health decision-making, information and interventions should be tailored to meet the individual’s needs. Treating every person as though they are the same will only serve to dilute the message for everyone. Scarleteen.com utilizes TTM by not

simply providing factual answers, but by engaging in a dialogue with the original poster. The trained volunteers who answer questions look at as much of a history as possible for each individual poster. They ask follow-up questions and provide additional education materials that are specific to each individual's needs, and they encourage and praise safe sex practices to reinforce healthy behaviors. This is where HealthBoards.com fails. Answers can be posted by any board member, which leads to a lack of consistency in the responses. Answers are sometimes discouraging instead of encouraging, and they only answer the current question. From a public health perspective, Scarleteen.com is superior in its use of trained volunteers, evidence-based, educational approach and reinforcement of safe sex practices.

### **Limitations**

There are a number of limitations to this analysis. Perhaps most importantly, the goal of a qualitative analysis is to uncover a deeper understanding of the available, relevant text, therefore the results of this study are not an attempt to represent or generalize about all teenagers. This study represents only a small subsection of teens and young adults who chose to utilize the Internet for answers to sexual health questions. Additionally, although questions were posted from a number of countries throughout the world, this analysis is not necessarily representative of all teens and young adults throughout the world or even in the United States. It does not necessarily represent all sexual orientations. In the same vein, because the Internet is a relatively anonymous platform, there is no way to fully ensure the legitimacy of each question or the ages, genders and locations of the posters. Additionally, the analysis focused only on two specific online message boards that are open to questions about sexual health issues for teens and young adults. It therefore does not represent all sexual health message boards available to Internet users, nor does it represent questions asked via other venues, such as friends and family. Finally,

this analysis did not include any questions pertaining to unwanted sexual encounters (i.e. sexual assault or rape).

### **Conclusion and Public Health Implications**

While teen pregnancy rates in the United States are declining, they are still the highest of any developed country in the world. Additionally, rates of STIs (particularly syphilis and gonorrhea) are on the rise among U.S. teens. Results of this study show that while the teenagers utilizing these message boards have a basic knowledge about sexual health, they do not always have the confidence or understanding to turn their knowledge into usable skills or their intent into safe sex practice, and anxiety is common among sexually active teens.

Going forward, it is recommended that sexual health education place more emphasis on the following: 1) Short-term and long-term risks of STIs, 2) encouragement of more frequent STI testing, 3) applied practice on negotiating safe sex practices with partners, 4) guidance toward credible Internet sources for answers to sexual health questions. In light of these recommendations, it is suggested that further research be conducted regarding what teenagers and young adults know about sexual health and how that impacts their actions and choices regarding safe sex practice.

Naghavi, Rotonda, Stewart, Tattersall, and Winkler (2012) found that past sex education did not generally influence current sexual behavior among college students. The study concluded that many of the issues surrounding the increase of STIs and risky sexual behavior among young adult populations result from a lack of communication between sexual partners regarding safe sex practices such as STI testing and condom use. Additionally, alcohol plays a large role in unsafe sex practices on college campuses. In light of this it is recommended that current and future sex education programs for middle school and high school students relegate

more time to educating students on how to negotiate condom use, STI testing and other safe sex practices with a sexual partner. It is also recommended that college and university campuses put forth a greater effort to remind and re-educate young adults about safe sex practices and alcohol consumption as a way to reinforce the education the students initially learned at a younger age as well as provide any new information that may be available. Safe sex practices can be learned but it is recommended that future programs place more emphasis on long-term learning by reinforcing and encouraging health sex practices throughout a person's life.



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**Appendix A: List of Tier 1 Core Public Health Competencies Met**

<b>Domain #1: Analytic/Assessment</b>
Identify the health status of populations and their related determinants of health and illness (e.g., factors contributing to health promotion and disease prevention, the quality, availability and use of health services)
Describe the characteristics of a population-based health problem (e.g., equity, social determinants, environment)
Use variables that measure public health conditions
Use methods and instruments for collecting valid and reliable quantitative and qualitative data
Identify sources of public health data and information
Recognize the integrity and comparability of data
Identify gaps in data sources
Adhere to ethical principles in the collection, maintenance, use, and dissemination of data and information
Describe the public health applications of quantitative and qualitative data
Collect quantitative and qualitative community data (e.g., risks and benefits to the community, health and resource needs)
Use information technology to collect, store, and retrieve data
Describe how data are used to address scientific, political, ethical, and social public health issues
<b>Domain #2: Policy Development and Program Planning – N/A</b>
<b>Domain #3: Communication</b>
Identify the health literacy of populations served
Communicate in writing and orally, in person, and through electronic means, with linguistic and cultural proficiency
Solicit community-based input from individuals and organizations
Convey public health information using a variety of approaches (e.g., social networks, media, blogs)
Participate in the development of demographic, statistical, programmatic and scientific presentations
Apply communication and group dynamic strategies (e.g., principled negotiation, conflict resolution, active listening, risk communication) in interactions with individuals and groups
<b>Domain #4: Cultural Competency</b>
Incorporate strategies for interacting with persons from diverse backgrounds (e.g., cultural, socioeconomic, educational, racial, gender, age, ethnic, sexual orientation, professional, religious affiliation, mental and physical capabilities)
Recognize the role of cultural, social, and behavioral factors in the accessibility, availability, acceptability and delivery of public health services
Respond to diverse needs that are the result of cultural differences
Describe the dynamic forces that contribute to cultural diversity
<b>Domain #5: Community Dimensions of Practice</b>
Recognize community linkages and relationships among multiple factors (or determinants) affecting health (e.g., The Socio-Ecological Model)
Describe the role of governmental and non-governmental organizations in the delivery of community health services
Identify community assets and resources
<b>Domain #6: Public Health Sciences</b>
Identify prominent events in the history of the public health profession
Identify the basic public health sciences (including, but not limited to biostatistics, epidemiology, environmental health sciences, health services administration, and social and behavioral health sciences)
Describe the scientific evidence related to a public health issue, concern, or, intervention
Retrieve scientific evidence from a variety of text and electronic sources
Discuss the limitations of research findings (e.g., limitations of data sources, importance of observations and interrelationships)
<b>Domain #7: Financial Planning and Management – N/A</b>
<b>Domain #8: Leadership and Systems Thinking</b>
Identify internal and external problems that may affect the delivery of Essential Public Health Services